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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,726	10/05/2000	Richard P. Schneider	10004229-1	2517

7590 05/21/2003

Agilent Technologies
Legal Department 51U PD
Intellectual Property Administration
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EXAMINER	
DIAZ, JOSE R	
ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/680,726	SCHNEIDER ET AL.	
	Examiner	Art Unit	
	José R Diaz	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *3-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

➢ The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

➢ Claims 3-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Jewell (US Pat. No. 5,859,864).

Regarding claims 3-4, 12, 15-17, 25 and 28-32, Jewell teaches a VCSEL device (see Fig. 4a) comprising: a device structure, having a height z and an aperture (114), including an active layer (110), and upper and lower DBR (102, 116); contacts (122, 124); and a light emission property that varies within the aperture and the light output is in spatially fixed modes (see col. 5, lines 5-17). Furthermore, Jewell teaches a non-planar VCSEL structure (see Figs. 2a-2d and 3a-3b), wherein a phase mismatch is provided. Such VCSEL properties disclosed by Jewel are the same properties that Applicant intents to claim, hence it is inherent that by providing a non planar structure and a phase mismatch, a light emission property such as refractive index and Fabry-Perot wavelengths varies within the aperture and the light output is in spatially fixed modes.

Regarding claim 5, Jewell teaches a non-planar layer (consider the mesa 26) and a substrate (52) adjacent to the DBR (102) (see Fig. 4a).

Regarding claims 6-7, 9, 11, 14, 19-20, 22, 24, and 27, Jewell teaches that the non-planar layer is a texturing layer (consider the fact that the substrate, which comprises more than one layer, is patterned to create the mesa structure 26). See col. 7, lines 43-46 and col. 11, lines 60-66 and col. 12, lines 30-37. Furthermore, with regards to the process steps of patterning or polishing described in the claims, Applicant should noted that such limitations contain method of making characteristics given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claims 8, 13, 21, and 26, Jewell teaches that the non-planar layer (26) is a layer within at least one of the upper or lower DBR (102) (see Fig. 4a).

Regarding claims 10, 18 and 23, Jewell teaches that the non-planar layer (26) is a first surface of the substrate (52) adjacent to the lower DBR (102) (see Fig. 4a).

➢ Claims 3-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Lebby et al. (US Pat. No. 5,848,086).

Regarding claims 3-4, 12, 15-17, 25, 28 and 30-32, Lebby et al. teach a non-planar VCSEL device (see Figs. 1-2) comprising: a device structure, having a height z and an aperture (not shown), including an active layer (117), and upper and lower DBR (109, 127); contacts (112, 132); and a light emission property that varies within the aperture and the light output is in spatially fixed modes (see col. 8, lines 30-36). Furthermore, the VCSEL property disclosed by Lebby et al. is the same property that Applicant intents to claim, hence it is inherent that by providing a non planar structure, a light emission property such as refractive index and Fabry-Perot wavelengths varies within the aperture and the light output is in spatially fixed modes.

Regarding claim 5, Lebby et al. teach a non-planar layer (155, 256) and a substrate (101) adjacent to the DBR (109) (see Figs. 1-2).

Regarding claims 6-7, 9, 11, 14, 19-20, 22, 24, and 27, Lebby et al. teach that the non-planar layer is a texturing layer (consider the fact that the layers 155 and/or 256 are patterned). See Figs. 1-2 and col. 3, lines 3-41. Furthermore, with regards to the process steps of patterning or polishing described in the claims, Applicant should noted that such limitations contain method of making characteristics given no patentable weight in determining patentability of the final device structure. Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal

with this issue); In re Marosi et al, 218 USPQ 289; and particularly In re Thorpe, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear.

Regarding claims 8, 13, 21, and 26, Lebby et al. teach that the non-planar layer (155, 256) is a layer within at least one of the upper or lower DBR (109) (see Figs. 1-2).

Regarding claims 10, 18 and 23, Lebby et al. teach that the non-planar layer (155, 256) is a first surface of the substrate (101) adjacent to the lower DBR (109) (see Figs. 1-2).

Regarding claim 29, Lebby et al. further teach removing the substrate after the step of forming electrical contacts (see col. 6, lines 37-54).

Response to Arguments

➢ Applicant's arguments filed on March 3, 2003 have been fully considered but they are not persuasive. With regards to the arguments about the "textured surface", Applicant teaches in the specification that the step of texturizing a surface" is done by applying, for example, a lithographic or an etching process (see page 7, lines 15-19). The reference Jewell discloses such texturizing step in col. 11, lines 60-64, wherein Jewell teaches texturing the surface by performing an etching process. And, the

reference Lebby et al. discloses such texturizing step in col. 3, lines 5-7, wherein Lebby et al. teach the step of texturing the surface by etching or lithographic. Thus, the rejection is considered to be proper since both Jewell and Lebby et al. teach the required textured surface.

Conclusion

- **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to José R Díaz whose telephone number is (703) 308-6078. The examiner can normally be reached on 9:00-5:00 Monday, Tuesday, Thursday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 746-3891 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JRD
May 18, 2003

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800